

REMARKS

This amendment is submitted in response to the final Office Action mailed on June 12, 2007. Claims 1-3, 5-15 and 17-27 are pending in the application. Claims 26 and 27 have been withdrawn from consideration. Claims 1-3, 5-15 and 17-25 have been rejected. Favorable reconsideration of the application, as amended, is respectfully requested.

1. Entry of Amendments After Final Rejection

The Examiner is respectfully requested to enter the amendments after final rejection for the following reasons. Claim 1 has been amended to state that the fibers have properties suitable for forming the roofing mat. This amendment does not introduce any new issues because the claim previously stated that the roofing mat is formed from fibers, and thus it was understood although not explicitly stated that the fibers must have properties suitable for forming the mat. Also, this amendment will place the application either in condition for allowance or in better form for appeal.

Claim 9 has been amended to state that the sulfur added to the coating material is elemental sulfur and that it is added in an amount from 0.1% to 5% by weight. This claim language was present in original claim 20 and in claim 24 added in a previous amendment. Thus, the Examiner has already considered this claim language and it will require only a cursory review. Also, this amendment will place the application either in condition for allowance or in better form for appeal.

2. 35 U.S.C. 112 Rejection

Claim 25 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The Examiner said that it is unclear how the elemental sulfur reacting with the double bonds in the asphalt anchors the asphalt. Claim 25 has been amended to delete the language about anchoring the asphalt, which should obviate this rejection.

3. 35 U.S.C. 103(a) Rejection Over Miller et al. in View of Marzocchi et al.

Claims 1, 3, 5-8 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 6,228,785) in view of Marzocchi et al. (US 4,265,563). Independent claim 1 recites a roof covering including a roofing mat formed from fibers that have properties suitable for forming the roofing mat. The fibers are coated with a sizing. An asphalt-based coating material coats the mat. The sizing includes a sulfur-containing material that bonds to the fiber material, the sulfur-containing material having sulfur groups that form cross-links with the asphalt. The sulfur-containing material in the sizing increases the tear strength of the roof covering by at least about 5%.

Miller et al. discloses roof coverings including a glass fiber roofing mat and an asphalt-based coating material. Marzocchi et al. discloses a composition for road paving including asphalt and glass flakes. Before adding them to the asphalt, the glass flakes are treated with a silane coupling agent or with a mixture of an amino silane and sulfur.

The Examiner said that it would have been obvious to modify the glass fiber mat of Miller et al. with the sizing agent of Marzocchi et al. to improve the adhesion between the glass fibers and the asphalt-based coating material, and that although Marzocchi et al. does not teach the claimed tear strength improvement, it is presumed that this property is inherent to Marzocchi et al.

Applicants submit that it is improper to combine the teachings of Marzocchi et al. with those of Miller et al. because they relate to distinctly different fields. Marzocchi et al. relates to a road paving composition whereas Miller et al. relates to a roof covering. David Jones, an expert in both the fields of roof coverings and road paving materials, has submitted two declarations giving his opinion that persons skilled in the roof covering field would not look to the road paving field for teachings that could be applicable to roof coverings.

Moreover, the teachings of Marzocchi et al. relate to glass flakes in a road paving composition, not to fibers having properties suitable for forming a roofing mat in a roof covering as recited in claim 1 and as disclosed in Miller et al. Consistent with the Supreme Court's ruling in *KSR International Co. v. Teleflex, Inc.*, 550 U.S.

_____, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385, No. 04-1350 slip op. (U.S. 2007), in order to combine references in a rejection under 35 U.S.C. §103(a) there must be something in the references or in the generally known art to motivate the skilled artisan to make the combination. There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to apply the teaching related to glass flakes in a road paving composition to fibers having properties suitable for forming a roofing mat in a roof covering.

Teachings related to glass flakes are not obviously applicable to the fibers that form roofing mats. The Marzocchi et al. glass flakes are very small flakes having a thickness of 0.0003 to 0.0004 inch and an average diameter of 0.01 to 0.2 inch, in contrast to fibers suitable for making roofing mats which are thread-like and longer. In his declaration David Jones stated that glass flakes would be unsuitable for making a roofing mat. Also, the coating material of a roof covering is significantly different in composition and properties from a road paving composition. As a result, the interaction between flakes and a road paving composition is significantly different from the interaction between fibers and a roof coating. Thus, there would have been no suggestion or motivation to a person of ordinary skill in the art to apply Marzocchi et al.'s teachings to the Miller et al. roof covering.

Further, even if the teachings of Marzocchi et al. were combined with Miller et al., the resulting product would not be a roofing material having significantly improved tear strength as recited in the present claims. The Miller et al. roofing material includes a web bonded to the bottom surface of the roofing material that provides significant tear resistance. The addition of the Marzocchi et al. materials to the Miller et al. roofing material would not significantly improve the tear strength above the improvement provided by the web. The Miller et al. roofing material could not be modified to remove the web because it is a key feature of the invention.

The Examiner noted that two patents in the Prior Art section of Marzocchi et al. relate to both road paving and roof coverings, and has argued that this shows that the Marzocchi et al. teachings are also applicable to both road paving and roof coverings. Applicants respectfully disagree. Marzocchi et al. describe their invention only in terms of applicability to road paving compositions. The prior art is only

described for background purposes, and it does not mean that Marzocchi et al. is also related to both applications.

Therefore, it is respectfully submitted that claim 1 and its dependent claims 3, 5-8 and 22 are not obvious in view of the cited references.

4. 35 U.S.C. 103(a) Rejection Over Miller et al. in View of Marzocchi et al., and Further in View of Williams et al.

Claims 2, 9-15, 17-21 and 23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. in view of Marzocchi et al., and further in view of Williams et al. (US 4,265,563). Since independent claim 9 has been amended to incorporate the language of claim 24, the rejection of this claim and its dependent claims will be discussed below in section 5 of the remarks, and only the rejection of claim 2 will be discussed here.

Williams et al. discloses polymer composite articles including a polymer, an inorganic substrate, and a polysulfide silane coupling agent applied to the substrate. The Examiner stated that it would have been obvious to modify the glass fiber mat of Miller et al. with the sulfide silane coupling agent of Williams et al. to simplify the coating of the glass fibers to one chemical treatment and to improve the strength of the resin phase.

Applicants submit that it is not proper to combine the teachings of Williams et al. with those of Miller et al. because they relate to distinctly different fields. Williams et al. relates to polymer composite articles whereas Miller et al. relates to asphalt-based roof coverings. Mr. Jones in his declaration gave his expert opinion that a person skilled in the art of roof coverings would not look to the polymer composite field for teachings that could be applicable to roof coverings.

Also, since claim 2 depends from claim 1, Applicants submit that it is patentable for at least the reasons described above with respect to that claim.

5. 35 U.S.C. 103(a) Rejection Over Miller et al. in View of Marzocchi et al. and Williams et al., and Further in View of Kennepohl et al.

Claims 24 and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. in view of Marzocchi et al. and Williams et al., and further in view of Kennepohl et al. (US 4,079,158). Independent claim 9 and its dependent claims 10-15, 17-21 and 23 now incorporate the language of claim 24, so these claims will also be discussed here.

Amended claim 9 recites a roof covering including an asphalt-based coating material that coats the mat, the coating material including elemental sulfur added to the coating material in an amount from about 0.1% to about 5% by weight of the coating material.

In the final Office Action, the Examiner said that the disclosures of Miller et al., Marzocchi et al. and Williams et al. fail to teach the use of elemental sulfur in the asphalt matrix. However, Kennepohl et al. was cited as disclosing the dispersion of sulfur in asphalt that is used to make roofing to obtain improved fire resistance. The Examiner said that it would have been obvious to use the sulfur asphalt blend of Kennepohl et al. in the roofing article of Miller et al. motivated by the desire to obtain improved fire resistance.

Applicants submit that it is improper to combine the teachings of these four different references in order to reject the claims. A person of ordinary skill in the art would not be motivated to combine the teachings of the references because they relate to distinctly different fields. Miller et al. and Kennepohl et al. relate to asphalt-based roof coverings, but Marzocchi et al. relates to road paving compositions and Williams et al. relates to polymer composite articles. Also, Miller et al. relates to roofing mats whereas Marzocchi et al. relates to glass flakes. David Jones' declarations state that a person of ordinary skill in the art would not be motivated to combine the teachings of the references in the different fields. Further, there is no suggestion in Miller et al. of any need to improve the fire resistance of the roof coverings.

Moreover, even if the references were combined the resulting product would still be different from the claimed invention. Kennepohl et al. teaches that it is necessary to add between 10% and 55% sulfur by weight of the coating material in

order to improve the fire resistance of the roof covering. In contrast, claim 9 recites the addition of only from about 0.1% to about 5% by weight of sulfur to the coating material in order to improve the tear strength of the roof covering. There is no suggestion in the cited references of a way to improve the tear strength of a roof covering, and particularly no suggestion that adding only a small amount of elemental sulfur to the coating material is effective in significantly improving the tear strength.

Therefore, it is respectfully submitted that claim 9 and its dependent claims 10-15, 17-21 and 23-25 are not obvious in view of the cited references.

In view of the above, Applicants respectfully submit that the claimed invention is patentable over the prior art. A Notice of Allowance is respectfully requested.

Respectfully submitted,



Margaret S. Millikin
Reg. No. 38,969
Owens Corning
2790 Columbus Road, Rt. 16
Granville, OH 43023
(740) 321-5359

Date

9/17/07